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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,122	09/06/2001	Thomas Bieringer	MO-6585/LEA 33,633	9409

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EXAMINER
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ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 06/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/936,122

Applicant(s)

BIERINGER ET AL.

Examiner

Martin J Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2001 and 20 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This claim is directed to a different statutory class than either of the two claims it is dependent upon. Also the claims does not describe what is being injection molded.

In claim 21, "S<sup>1</sup>", "T" and "Q<sup>1</sup>" are undefined.

In claim 14, at line 3, please replace "objects" with - - holographic images- -

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5 Claims 1-10,13 and 14 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Savant et al. '221.

Example IV uses dye concentrations of 4.5 to 25% in polyvinyl alcohol. Examples V describes the azo dyes bound to a polyethylene vinyl alcohol backbone and coated to a thickness of 10 microns. Examples XIII to XX describe thicknesses of 10 to 150 microns (0.1 to 0.15 mm) with dye loading concentrations of 10% as the best (23/53-55). The storage of multiple holograms in the same spot by controlling the angle between the incident (object) and reference beams is disclosed. (25/46-57 and 7/11-15). Suitable polymers are disclosed in columns 8-10. Useful azo dyes are disclosed in columns 9-17. The formation of thicknesses of 10-1000 microns by spin coating is disclosed. (18/51-66).

6 Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savant et al. '221.

It would have been obvious to one skilled in the art to modify the examples of Savant et al. '221 cited by angularly multiplexing holograms during recording and reading them out to increase the amount of information recorded in the hologram, thereby increasing its utility.

7 Claims 1-4,6-10 and 13-14 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Haarer et al. DE 4431823.

See example, which copolymerizes the two monomers on page 6 and coats them to a thickness of 34 microns. A hologram ("holographische gitter", holographic grating) was formed. The second monomer is considered to contain a shape anisotropic grouping.

8 Claims 1-4,6-10,13,14 and 20-21 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Stumpe et al. DE 4339862.

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See polymers of formulae IV - VI on page 12. Note that the polymer of formula IV uses an azo monomer corresponding to that shown on page 13 at line 5 of the instant specification.

Examples 13 and 14 coat these in 15 microns thick films (14/1-13).

9 Claims 1-4,6-10,13,14 and 20-21 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Berneth et al. DE 19703132.

See copolymers on pages 10-15. These are evaluated on the basis of their absorption maxima when coated 0.9 microns thick on a glass substrate and written upon using an argon ion laser at a laser power of 250 mW (9/5-9). See dye monomer on 10/55 (similar to that at 12/10 of instant specification), dye monomer at 11/35 (similar to that at 12/15 of instant specification), dye monomer at 12/10 (similar to that at 11/8 of instant specification), dye monomer at 13/30 (similar to that at 12/20 of instant specification), dye monomer at 15/15 (similar to that at 13/7 of instant specification)

10 Claims 1-4,6-10,13,14 and 20-21 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Berneth et al. WO 98/51721.

See copolymers on pages 19-31. These are evaluated when coated 0.9 microns thick on a glass substrate and written upon using an argon ion laser at a laser power of 250 mW (27/9-19). See dye monomer on 21/1 (similar to that at 12/17 of instant specification), dye monomer at 24/17 (similar to that at 11/15 of instant specification), dye monomer at 29/5 (similar to that at 12/17 of instant specification), dye monomer at 30/7 (similar to that at 12/17 of instant specification).

11      Claims 1-10,13-15 and 20-21 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Eich et al., "Erasable holograms in polymeric liquid crystals", Makromol. Chem., Rapid Commun., Vol 8, pp. 467-471 (1987).

See the copolymers formed on page 468 and used in the optical cell having a spacing of 10 microns between the plates. See the similarity between the azo monomer and the monomer on page 13 at line 7. The recording of holographic images is disclosed. (page 470)

12      Claims 1-10,15 and 20-21 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ringsdorf et al., "Electrooptical effects of azo dyes containing liquid crystalline copolymers", Makromol. Chem., Vol 185, pp. 1326-1335 (1984).

See the copolymers formed on page 1329 and used in the optical cell having a spacing of 12 microns between the plates (page 1331, table text) See the similarity between the azo monomer and the monomer on page 13 at line 7.

13      Claims 1-10 and 20-21 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Hvilstead et al. '670.

See example 3 which includes recording a hologram.

14      Claims 1-10,13-15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieringer et al. '846.

See azo monomers disclosed in columns 4-6. See the liquid crystalline monomers, which exhibit shape anisotropy in columns 6-7. See also general formulae I and II. The recording of holograms is disclosed. (9/37-41). The formation of films of thicknesses of 0.1 and 1 mm is disclosed. (21-23). The use of copolymers is shown in polymers 4, 6-8, and 10-12 using azo monomer 7. The use of injection techniques is disclosed. (inflow)

It would have been obvious to one skilled in the art to modify copolymers 4, 6-8, and 10-12 using azo monomer 7 by using other azo monomers, such as those disclosed in columns 5 or 6 with a reasonable expectation of achieving a useful holographic recording medium based upon the disclosure of equivalence and further to coat the resulting polymer to a thickness of more than 0.1 mm based upon the disclosure to do so.

15      Claims 1-15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** Bieringer et al. '846, Hvilstead et al. '670, Ringsdorf et al., "Electrooptical effects of azo dyes containing liquid crystalline copolymers", Makromol. Chem., Vol 185, pp. 1326-1335 (1984), Eich et al., "Erasable holograms in polymeric liquid crystals", Makromol. Chem., Rapid Commun., Vol 8, pp. 467-471 (1987), Berneth et al. WO 98/51721, Haarer et al. DE 4431823, or Stumpe et al. DE 4339862, in view of Savant et al. '221.

It would have been obvious to one skilled in the art to modify the examples of **either** Bieringer et al. '846, Hvilstead et al. '670, Ringsdorf et al., "Electrooptical effects of azo dyes containing liquid crystalline copolymers", Makromol. Chem., Vol 185, pp. 1326-1335 (1984), Eich et al., "Erasable holograms in polymeric liquid crystals", Makromol. Chem., Rapid Commun., Vol 8, pp. 467-471 (1987), Berneth et al. WO 98/51721, Haarer et al. DE 4431823, or Stumpe et al. DE 4339862 cited by angularly multiplexing holograms during recording and reading them out to increase the amount of information recorded in the hologram, thereby increasing its utility.

16      A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

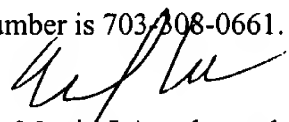
A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

17 Claims 1-15 and 20-21 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-17 of copending Application No. 09/936114. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

18 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebrannndt  
Primary Examiner  
Art Unit 1756

June 11, 2003